Cummins Inc.
Box 3005
Columbus, Indiana
47202-3005

February 10, 2003

03E-010 (1/11)

Mr. Kenneth Weinstein
Associate Administrator for Safety Assurance
U.S. Department of Transportation
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, DC 20590

Dear Mr. Weinstein:

In accordance with the procedures outlined in 49 CFR Part 573.5, we are submitting the attached safety defect information report. This recall involves 1267 ISB and ISB[6] engines. Only 125 of these engines are domiciled in North America, the remainder are domiciled in Europe. The North American engines are located in truck chassis manufactured by either Workhouse or Freightliner Custom Chassis.

The defect involves the engine crankshaft vibration damper which is mounted externally on the front of the engine. The main function of the damper is to reduce or diminish the crankshaft vibrations induced by the firing of the cylinders in the combustion process.

The suspect damper was designed and manufactured incorrectly which has resulted in failures of the hub of the damper. This design and manufacturing oversight could lead to cracks developing in the hub, causing the part to become loose and possibly detach itself from the engine. There have been no accidents, injuries or fatalities associated with the failure of this damper. Cummins will conduct a safety recall to install new dampers. All supporting details are outlined in the attached Report.

In addition, we have included a draft of the letter we would propose to send to our customers, as well as a copy of the envelope.

Cummins, Inc. will await your input on next steps. As always, if you have any questions, please contact me.

Sincerely,

Steven R. Butler
Engine Certification Director

Phone: 812-377-3713
Fax: 812-377-8739
Email: steven.r.butler@cummins.com

036-010 (2/11)

Safety Defect and Noncompliance Report Guide for Equipment

PART 573 Defect and Noncompliance Report[1]

On February 5, 2003, Cummins Inc. decided that (a defect which relates to motor vehicle safety) (a noncompliance with Federal Motor Vehicle Safety Standard No.) exists in items of motor vehicle equipment listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.

Date this report was prepared: February 10, 2003

Furnish the manufacturer's identification code for this recall (if applicable): 0307

1. Identify the full corporate name of the fabricating manufacturer/brand name/trademark owner of the recalled item of equipment. If the recalled item of equipment is imported, provide the name and mailing address of the designated agent as prescribed by 49 U.S.C. §30164.

Cummins Inc.

Identify the corporate official, by name and title, whom the agency should contact with respect to this recall.

Steven R. Butler, Engine Certification Director

Telephone Number: 812-377-3713 **Fax No.:** 812-377-8739

Name and Title of Person who prepared this report.

Steven R. Butler, Engine Certification Director

Signed:

[1]Each manufacturer must furnish a report, to the Associate Administrator for Safety Assurance, for each defect or noncompliance condition which relates to motor vehicle safety.

This guide was developed from 49 CFR Part 573, "Defect and Noncompliance Reports" and also outlines information currently requested. Any questions, please consult the complete Part 573 or contact Mr. Jon White at (202) 366-5226 or by FAX at (202) 366-7882.

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1. Identify the Recalled Items of Equipment

2. Identify the items of Equipment involved in this Recall, *for each make and model or applicable item of equipment product line (provide illustrations or photographs as necessary to describe the item of equipment), provide:*

Generic name of the item: Crankshaft Vibration Damper

Make: _____ **Model:** Used on Cummins ISB 4 Cylinder and ISB® 4 Cylinder engines manufactured between October 1, 2000 and June 30, 2001

Part Number: Cummins P/N 4891114 and 4898386 **Size:** N/A

Function: Reduce crankshaft torsional motion **Other information which characterizes/distinguishes the items of equipment to be recalled:**

The damper weight is external and rubber mounted

Generic name of the item:
Make: _____ **Model:** _____

Part Number: _____ **Size:**

Function: _____ **Other information which characterizes/distinguishes the items of equipment to be recalled:**

Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items of equipment from January 1, 1996, through April 1, 1997, then what was the percentage of the recalled Widgets of all Widgets manufactured during that time period.

100%

B. Identifying the Recall Population

3. Furnish the total number of items of equipment recalled potentially containing the defect or noncompliance.

Model	Year	Number of Items Potentially Involved
ISB 4 Cylinder (North America)	10/1/2000 – 6/30/2001	125
ISB® 4 Cylinder Engines (Europe)	10/1/2000 – 6/30/2001	1162
All engines have a Serial Number within the range of 21436401 to 21478129		

Total Number Potentially Affected by the Recall: 1287

4. Furnish the approximate percentage of the total number of items of equipment estimated to actually contain the defect or noncompliance: 100%

Identify and describe how the recall population was determined—in particular how the recalled models were selected and the basis for the beginning and final dates of manufacture of the recalled items of equipment:

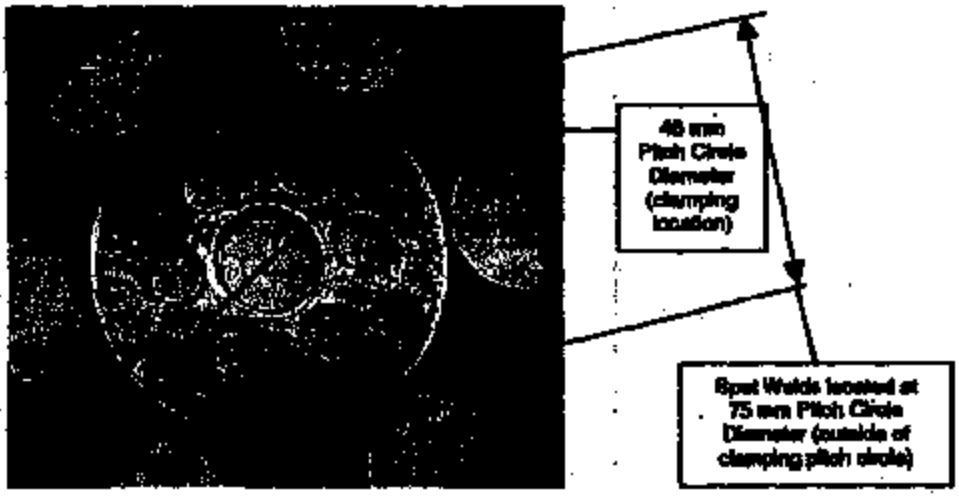
125 ISB 4 Cylinder engines domiciled in North America with a build date between 10/1/2000 and 6/30/2001 and a Serial Number between 21436401 – 21478129 are included in the recall population.

1162 ISB® 4 Cylinder engines domiciled in Europe with a build date between 10/1/2000 and 6/30/2001 and a Serial Number between 21436401 – 21478129 are included in the recall population.

III. Describe the Defect or Noncompliance

5. Describe the defect or noncompliance. The description should address the nature and physical location of the defect or noncompliance. Illustrations should be provided as appropriate.

Vibration dampers fitted to the engines listed above were manufactured with a spacer plate that is attached to the vibration damper center hub by 6 spot welds located at a pitch circle diameter of 75 mm. This location is outside of the vibration damper mounting capscrew clamping area (which is 48 mm pitch circle diameter). This area naturally flexes with the torsional movement of the vibration damper. The welded area of the hub is more rigid, and the torsional flexing causes some of the vibration damper hubs to crack.



Describe the cause(s) of the defect or noncompliance condition.

The first 76 vibration dampers were correctly manufactured to the Cummins print specification. A change to this print was made by Cummins Inc. prior to 1/1/2001 that specified 3 spacer plate spot welds located at a pitch circle diameter of 48 mm. The supplier failed to implement this specified change, and the remaining 1,211 dampers were manufactured with 6 spot welds located at a pitch circle diameter of 75 mm. This spot weld location is outside of the vibration damper mounting capscrew clamping area. This area naturally flexes with the torsional movement of the vibration damper. The material hardness of the spacer plates welded to these vibration dampers is at the upper limit of the Cummins' specification. This material characteristic combined with the rigid

characteristics of the spot welds and the natural torsional movement of the hub has caused some of the vibration damper hubs to crack.

Describe the consequence(s) of the defect or noncompliance condition.
Damper spacer plate spot welds located outside of a 48 mm pitch circle diameter can cause the center hub of the vibration damper assembly to fracture due to material fatigue (as shown below).

Crankshaft vibration damper with cracked center hub

Identify any warning which can (a) precede or (b) occur.
(a) A rattle noise initiating in the engine compartment.
(b) An increase in engine vibration levels.

If the defect or noncompliance is in a component or assembly purchased from a supplier, identify the supplier by corporate name and address.
STE Vibration Technik GmbH & Co KG
Bahnhofstrasse 9-11
D-06869 Kljeken
Germany

Identify the name and title of the chief executive officer or knowledgeable representative of the supplier:
Manfred Kindermann, Managing Director

IV. Provide the Chronology in Determining the Defect/Noncompliance

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If the recall is for a defect, complete item 6, otherwise item 7.

6. With respect to a defect, furnish a chronological summary (including dates) of all the principle events that were the basis for the determination of the defect. The summary should include, but not be limited to, the number of reports, accidents, injuries, fatalities, and warranty claims.

~~**7. With respect to a noncompliance, identify and provide the test results or other data (in chronological order and including dates) on which the noncompliance was determined.**~~

Between 10/1/2000 and 12/31/2000, Cummins Inc. manufactured at total of 76 "pre production" ISB 4 Cylinder and ISB" 4 Cylinder engines with a STE Vibration Technik crankshaft vibration damper that was manufactured with 6 spacer plate spot welds located at a pitch circle diameter of 75 mm. This spot weld location is outside of the vibration damper mounting capscrew clamping area. This area naturally flexes with the torsional movement of the vibration damper. The material hardness of the spacer plates welded to these vibration dampers is at the upper limit of the Cummins' specification. This material characteristic combined with the rigid characteristics of the spot welds and the natural torsional movement of the hub has caused some of the vibration damper hubs to crack.

Prior to 1/1/2001, Cummins Inc. changed the print to specify 3 spacer plate spot welds located at a pitch circle diameter of 48 mm. The supplier (STE) failed to implement this specified change, and the remaining 1,211 dampers were manufactured with 6 spot welds located at a pitch circle diameter of 75 mm.

Engines manufactured after 6/30/2001 were built with a vibration damper that was manufactured with a spacer plate with a median material hardness. This material characteristic significantly lessons the likelihood of component failure due to hub cracks.

Engines manufactured after 2/28/2002 were built with a vibration damper assembly manufactured with 3 spot welds located at a pitch circle diameter of 48 mm. This design is not sensitive to spacer plate material hardness due to the location of the welds within the mounting capscrew clamping area.

There have been no reported accidents, injuries or fatalities associated with the failure of vibration dampers fitted to ISB 4 Cylinder and ISB4° 4 Cylinder engines built in the 10/2000 through 7/2001 time frame.

V. Identify the Remedy

8. Furnish a description of the manufacturer's remedy for the defect or noncompliance. Clearly describe the differences between the recall condition and the remedy.

The remedy for current and future engine production is the utilization of a vibration damper that is manufactured with 3 spacer plate spot welds located at a pitch circle diameter of 48 mm. Further, the 1287 recall engines are to be fitted with a vibration damper that is manufactured with 3 spacer plate spot welds located at a pitch circle diameter of 48 mm.

Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.

The vibration damper spacer plate is to be attached to the damper assembly with 3 spot welds located at a pitch circle diameter of 48 mm verses the recall vibration dampers that were manufactured with 6 spacer plate spot welds located at a pitch circle diameter of 75 mm.

Identify and describe how and when the recall condition was corrected in production. If the production remedy was identical to the recall remedy in the field, so state. If the product was discontinued, so state.

Engines manufactured after 6/30/2001 were built with a vibration damper that was manufactured with a spacer plate with a median material hardness. Engines manufactured after 2/28/2002 were built with a vibration damper assembly manufactured with 3 spot welds located at a pitch circle diameter of 48 mm. This assembly (since 2/28/2002) is identical to the recall remedy.

VI. Identify the Recall Schedule

Furnish a schedule or agenda (with specific dates) for notification to other manufacturers, dealers/retailers, and purchasers. Please, identify any foreseeable problems with implementing the recall.

OEM notification – within 5 working days of receiving your approval of our draft communication

Customer notification – to commence within 5 working days of receiving your approval of our draft communication

Repairs beginning – on commencement of letters received and customers contacting our repair facilities (estimated to be mid to late March 2003)

VII. Furnish Recall Communications

9. **Furnish a final copy of all notices, bulletins, and other communications that relate directly to the defect or noncompliance and which are sent to more than one manufacturer, distributor, or purchaser. This includes all communications (including both original and follow-up) concerning this recall from the time your company determines the defect or noncompliance condition on, not just the initial notification. *A DRAFT copy of the notification documents should be submitted to this office by Fax (202-366-7882) for review prior to mailing.***

A draft copy of the letter to our customer is attached, along with a copy of the envelope to be used.

Note: These documents are to be submitted separately from those provided in accordance with Part 573.6 requirements.

Cummins Inc.
Box 3005
Columbus, Indiana
47202-3005

DATE:

03E-010 (10/11)

Dear Customer,

IMPORTANT SAFETY NOTICE

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. Cummins Inc. has determined that a defect that relates to motor vehicle safety exists in chassis manufactured by Workhorse and Freightliner Custom Chassis that are powered by a Cummins 3.9 liter ISB 4 Cylinder engine.

Cummins Inc. has determined that the ISB 4 Cylinder crankshaft vibration damper may pose a risk to vehicle safety on engines installed in chassis manufactured by Workhorse and Freightliner Custom Chassis. The affected engines were built from October 2000 through July 2001, and have an Engine Serial Number within the range of 21436401 to 21477128.

The defect involves the potential for cracks to develop in the center hub area of the crankshaft vibration damper. Under these conditions, if cracks appear, material from this area may become loose, and the possibility of flying debris may exist.

Cummins Inc. urges you to contact your nearest Cummins Distributor for corrective action. This will be done without charge to you. The time needed to perform the corrective action is approximately 4.0 hours. The crankshaft vibration damper will be replaced with a new design.

Should you have any questions or difficulties regarding this program, please contact our Customer Assistance Center by calling our toll free number 1-800-343-7357 (1-800-DIESELS)

Should you have a complaint relative to the correction of the engine, you may wish to report that to:

Administrator, National Highway Traffic
Safety Administration
400 Seventh Street, S.W.
Washington, DC 20590

Or you may call the toll free Auto Safety Hotline at 1-800-424-9393.

We regret the inconvenience this recall may cause you.

Regards,

Bryan Rathert
Executive Director of Powercare
Service Engineering
Cummins Inc

Phone: 812-377-5000
Facsimile: 812-377-3334

03E-010 (11/11)

Cummins Engine Company, Inc.
Box 3005
Columbus, Indiana
47202-3005

SAFETY RECALL NOTICE